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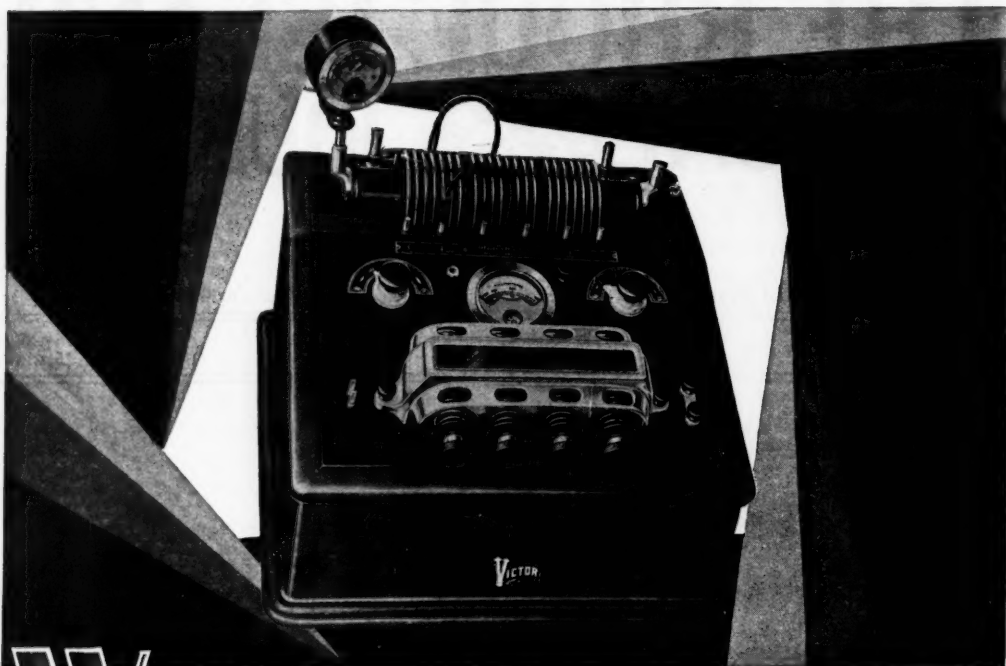
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## ORIGINAL ARTICLES

### SPINAL ANESTHESIA\*

By ELIOT A. SHAW, M.D.; F.A.C.S.  
PROVIDENCE, R. I.

My part on this program is to briefly describe the Pitkin Technique of Spinal Anesthesia; its indications and contraindications, and the effects obtained.

The Pitkin Solutions and Technique is so called having been developed by Dr. Pitkin of New Jersey. H. A. Metz Company markets the solutions under the name Spinocain. One ampule contains 1 cc. of 5% ephedrin and 1% novocaine, while a second ampule contains 200 mgs. of novocaine and 2.2 mgs. of strychnia sulphate in 130 mgs. of starch paste, together with 324 mgs. of alcohol in normal saline to make 2 cc. In deciding upon suitable anesthetic for abdominal operations, particularly upper abdominal operations, one is always confronted with a serious problem. Ether could be given and sufficient relaxation obtained for both upper and lower abdominal operations, but in so doing the patient is subjected to the injurious effects of deep ether anesthesia, which predisposes to surgical shock, post-operative lung complications, and injuries to parenchymatous organs, i. e., heart, liver, kidneys, and the blood.

The patient may be protected in some measure by using some other anesthesia, such as regional or gas oxygen, or a combination of both, but in so doing the anesthetic danger is lessened while the surgical danger is increased, for in these forms of anesthesia less satisfactory relaxation is obtained. The anatomy, as a consequence, is not so clearly exposed, with a loss of accuracy and speed.

Operative conditions with Spinocain used as a spinal anesthesia offers a satisfactory solution in certain types of cases. The relaxation is better than with other anesthetics, the breathing of the patient is quiet and shallow, the intestines are contracted, the post-operative condition of the patient is distinctly better than with ether.

The chief improvements in Pitkin's Solution or Spinocain over other anesthetic solutions used in the spinal canal is, first, the use of ephedrine. This drug is an alkaloid obtained from the Chinese drug Ma Huang, and is closely related to epinephrine in its action, except that ephedrine's action is much more prolonged in that it maintains the blood pressure satisfactorily in the great majority of cases.

Secondly, Spinocain is a non-diffusible or viscid solution. This tends to hold the anesthetic drug at the point desired and prevent diffusion into other parts. By holding the drug at the desired point we may obtain a deeper and longer anesthesia, and by delay in diffusion action of the anesthetic drug, the prevention of alarming symptoms is obtained and likewise time is allowed to move the drug to the desired point in the spinal canal.

Another improvement in the Pitkin Solution is the use of a solution with a specific gravity lighter than spinal fluid. This fact has the advantage of also lessening diffusion.

On the other hand, Spinocain has been said to be dangerous, and causes undesirable post-operative complications. Without doubt, with improper selection of cases, improper technique, or inefficient care during the anesthesia, complications may result. With proper discrimination and selection of cases the results are good. Occasionally a failure to produce a satisfactory anesthesia may result. As has been said, in the use of Spinocain we are dealing with a solution of a different specific gravity from spinal fluid, which can be run up to a desired level by proper position of the patient, and so failure to get proper location should be reduced to a minimum. The instance in which this is apt to take place has been noted when it is that the anesthesia is high enough for the particular type of operation, but where progress of the operation proves not. In some instances it is impossible to puncture the dura and obtain spinal fluid—this happens in individuals with spinal arthritis, or a rigid spine.

The anesthesia cannot be accurately fitted to the length of the operation. The dose given and operation started, the length of the anesthesia cannot be changed, and the length is uncertain and

\*Read before the Providence Medical Association November 5th, 1928.

varies with different individuals. Statistics, however, have shown that from one hour to one and one-half hours is the average length of time of anesthesia—this time will usually permit of most operative procedures. If the operative time runs beyond the length of anesthesia, nitrous oxide may be given without seriously affecting the patient.

#### TECHNIQUE

Food should be withheld before spinal anesthesia, the same as before a general anesthetic, since vomiting may occur during the operation, and also because a supplementary general anesthetic may be necessary. The lower bowel should be emptied by enema, since spinal anesthesia relaxes the sphincter and contracts the intestines. A preliminary narcotic is of great help. This can be determined according to the age, vigor, and temperament of the patient.

Morphine grs.  $\frac{1}{4}$  and 1/150 of scopolamine is usually given one hour before operation hypodermatically. This does not intensify the anesthetic.

The patient should lie upon the table on the right side with knees flexed upon the abdomen, head bent forward and back "bowed" out. The skin is painted with iodine over wide area of the back from the 8th dorsal to the sacrum, the hair having been previously shaved.

Pitkin recommends injection for upper abdominal anesthesia between the 12th dorsal and 1st lumbar; for lower abdominal anesthesia, between 2nd and 3rd or 1st and 2nd lumbar interspaces; although in reality it should make no difference whether the injection is a low lumbar or between the 12th dorsal and 1st lumbar, since the length of anesthesia is regulated by the tilt of the table.

If an anesthesia is desired in the lower extremities or perineum, a Trendelenburg position of from 20°-25° is assumed. A 10°-15° Trendelenburg will keep the anesthesia below the umbilicus. A flat table or 5° Trendelenburg will allow the anesthesia to ascend to the costal margin.

After the site of injection is selected, with a hypodermic needle and Luer syringe  $1\frac{1}{2}$  inches in length, a solution containing 1 cc. of 1% solution of novocaine with ephedrine is injected under the skin. The lumbar puncture is made through the center of this injection. The lumbar puncture needle should be about a 22 gauge of rustless material, preferably nickloid. Nickloid is also less

likely to break. The needle is about 3 inches in length. The point is conical in shape, the advantage in a conical point being that a trap-door effect is cut in the dura that is closed on withdrawing the needle, and this prevents leakage of spinal fluid and so post-operative headache. The cannula is withdrawn and 30 gts. of spinal fluid is allowed to escape. The injection of Spinocain should not be made unless spinal fluid escapes from the needle; the spinal fluid should be clear, and under normal pressure. The Spinocain solution which has previously been drawn into a 2 cc. Luer lok syringe from the ampule is slowly injected into the canal.

Without detaching the needle, slowly refill the barrel of the syringe with the spinal fluid and re-inject. Unless this is done, anesthesia may be delayed 10°-15°, or may be incomplete and not last the desired time. The withdrawal of the spinal fluid tends to expand the solution and slightly mixes it with the spinal fluid and increases the volume sufficiently to surround the cord at the point of injection.

The needle is then withdrawn and a sterile dressing placed over site of injection. With the escape of 30 gts. of spinal fluid, the same intradural pressure which prevailed before injection is maintained. Should a large amount of spinal fluid escape, there is a possibility of the anesthesia ascending higher than desired. This would naturally cause a marked drop in B. P. and also tend to produce a severe post-operative headache. Therefore, the Spinocain should be placed in a syringe before beginning the lumbar puncture. The object in having the patient on the side in 5° Trendelenburg is to keep the solution which is of low specific gravity well down in the canal. If the anesthesia does not extend high enough, the table may be leveled or the head elevated slightly until the height desired is reached. Anesthesia should be tested not later than 2 minutes after injection, and its progress watched closely so that should it not approach the desired point the table may be elevated or lowered as the case may demand.

Sise, in his article, states that in all lower abdominal operations he plans to have the level of anesthesia at the ensiform, while for upper abdominal operations he has the level of anesthesia at the fourth rib.

The duty of the anesthetist during an operation under Spinocain consists in careful blood pressure



readings, noting the general condition of the patient, and attending to minor discomforts. Some stout people are apt to get cyanotic, particularly in the Trendelenberg position; such patients do well with oxygen. If the respiration is depressed, the face cyanosed, and blood pressure low, carbon dioxide will work an improvement.

The most common condition demanding watchful care is the fall in blood pressure. This brings up the question of what should be considered an undue drop. No set rule can be made, since one patient may be prostrated by a drop in blood pressure which has little apparent effect on another. In general, aged and sclerotic are more affected than the young and elastic. Sise and Pitkin feel that a systolic pressure of 80-90 is satisfactory; 60-70 is questionable; and a blood pressure 50 is distinctly unsatisfactory, and below 40, dangerous. Sise does not feel that it is well to try to maintain the blood pressure at the original level unless it is maintained by the ephedrine. A moderate drop in blood pressure does no harm. It is not like the drop of shock. If the drop in pressure is such as to require treatment, one would naturally think of giving a second dose of ephedrine. This is not satisfactory, however, and may be dangerous, since the drug is more effective prophylactically than therapeutically. In patients who have myocardiac weakness, a second dose of ephedrine may place too great a strain on the heart due to added peripheral resistance. Ephedrine in moderate doses may cause extra systoles and acute cardiac dilatation. Salt solution intravenously is the treatment that combats the low fall in blood pressure.

The proper use of ephedrine, and salt solution, calls for good judgment on the part of the anesthetist. It has been recorded that fatal results have followed either large doses or repeated doses of ephedrine. Two cases are reported in which ephedrine was given in repeated doses totalling 150 mgs. Both cases became cyanotic, fibrillated, and although the pressure was at or above normal, died in about 12 hours.

Should paralysis of respiration take place, it may be handled by artificial respiration, using enough oxygen to keep the color normal.

Babcock, who has had a varied experience in spinal anesthesia, more so, without doubt, than any man in America, formulates these three rules for safety:

1. There should be a proper selection of cases;
2. The patient should be watched carefully during the anesthesia;
3. Proper methods of resuscitation should be employed when necessary.

Under the first rule, patients in poor general condition, whether from the result of shock, hem-

orrhage, or sepsis, or whether the result of prolonged illness, are usually poor risks for spinal anesthesia. Ephedrine contracts the arterioles and stimulates the heart. If the patient's general condition, together with cardiac condition, is not sufficiently good to handle the increased peripheral resistance which results or to respond to stimulation, alarming and possibly fatal results may follow.

Under rule No. 2, it should be the duty of an experienced person to watch carefully the patient during the operation, and as long thereafter as the patient requires attention. Regular frequent observations of the patient's blood pressure, pulse, color, and breathing should be taken. If this is done, and the patient experiences collapse or respiratory paralysis, it will be immediately noted, in time to give adequate treatment.

The last rule demands adequate equipment at hand for the treatment of urgent symptoms.

In a series of 15 cases under Spinocain anesthesia, there were no deaths (there are two cases not reported in this series in which spinal puncture was attempted and convincing entrance not obtained, for which reasons spinal anesthesia was abandoned;) the anesthesia as to height and duration in all but one case was satisfactory. Of this series, there were five appendectomies, one repair of a perforated duodenal ulcer; three bilateral hemorrhaphies, one femoral hemorrhaphy, one hysterectomy, one right hemorrhaphy, one mid-thigh amputation, one exploratory laparotomy, one cholecystectomy. In four cases, nausea with some vomiting was present, but only a transitory condition. The greatest fall in blood pressure was 40 points—in all cases the blood pressure returned to approximately its normal level as estimated before the injection of Spinocain after an average drop of from 15-20 points occurring about 10-15 minutes after injection of Spinocain.

The average height of anesthesia was at the costal margin.

In one case, headache was present to a marked degree 15 minutes after injection, and persisted throughout the operation. In all cases except one the post-operative recovery was without note; in the case of the one exception, the patient died in 48 hours following a complete hysterectomy—this patient, in my opinion, died from the shock of the operation.

Pitkin, Geo. P.; *Jour. Med. Society of N. J.*; 24:425-428 (1927).

Sise, L. F.; *New England Jour. Med.* Vol. 199, No. 2 (1928).

Sise, L. F.; *Surg. Clinics, No. Amer.* 18:195-200 (1928).

Babcock, W. W.; *Anesth. & Analg.* 3:208-213 (1924).

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The R. I. Medico-Legal Society—Last Thursday—January, April, June and October. Roy McLoughlin, President; Dr. Jacob S. Kelley, Secretary-Treasurer.

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## EDITORIALS

### CLINICO-PATHOLOGICAL CONFERENCES

The modern hospital, whether connected with a medical school or not, has three main functions: first, the care of sick patients; second, the education of those who are to care for these patients; and third, the study of disease and methods of combating it. The very existence of a hospital is evidence of the fulfilment of the first function; too often, however, this is conceived to be the only

proper function without the realization that the lack of the other two makes the completion of the first impossible.

The establishment of regular clinico-pathological conferences, held at the Rhode Island Hospital on alternate Tuesdays during the noon hour, marks a distinctly forward step in the development of the second function above mentioned. The plan of these conferences is similar to that followed in most teaching hospitals. The "case" to be considered is presented in full clinical detail by the member of the staff under whose care the patient came, this presentation including history, physical

examination and essential laboratory findings. Where the X-ray plays an important part, the roentgenologist then discusses the case from his point of view. Finally, the pathologist presents detailed pathological and post-mortem data. Such presentations, together with the discussion which they evoke, have proved of tremendous interest and are of great value in bringing about better understanding and co-operation between the various departments involved.

While these conferences have been initiated by the staff of the Rhode Island Hospital, they are in no sense limited to that staff, and any member of the profession will be welcome to attend and to take part in the discussion. In this way it is hoped that the teaching value of our clinical material may be more fully realized and made easily available; and this effort on the part of our oldest and largest hospital to enlarge its educational function should merit our whole-hearted commendation and support.

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#### THE PRESS—AN APPRECIATION

Medical truths reach the public by but few channels: By the preaching of those qualified and by the newspapers. Offsetting these sources of the dissemination of the true faith are numerous false prophets who, perhaps unwittingly, but none the less truly lower the public intelligence by the propagation of false doctrines, heresy and schism. The public health, of course, depends upon private health, and those who reach individuals in practice are not usually teachers or preachers, and spend but little time in informing their patients as to matters other than the case in hand, and are, furthermore, too busy to linger and talk. It must be acknowledged that the principal informers of the public in matters medical are those newspapers who take it upon themselves to offer such vital and interesting information. In no other paper that we read is there anything like the space given to medical and allied sciences, nor is the material so good by a large degree as that given by the *Providence Daily* and *Sunday Journal*. Not only are the articles upon various ailments given in simple and direct wording, easily understandable by the average person, but the advice offered is consistent with the latest developments of medical science, without excursions into the visionary and the problematical. These brief synopses and an-

swers to questions are of inestimable value to many thousands of people. Even to physicians they are of profitable interest, as the tendency of the times is to specialism, and interests collateral to one's particular line are often per force neglected and the recollection dimmed by lack of refreshing practice and clinical experience.

The thanks of the medical profession, as well as the public, are also due to the *Journal* for its publication of matters relative to water supply, sewage, and the governmental activities regarding these tremendously important functions of public and private health. There is hardly any other way in which we may learn what is going on with regard to needed reforms in sewage disposal of cities and towns, of the pollution of natural streams with their co-existing problems of fish and shell fish foods or of public bathing problems. Information along these lines is very difficult to obtain, and it is only possible by a large and highly trained organization such as is operated by a modern and efficient newspaper,—but always at the behest of those who direct its policies and interests.

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#### THE MEDICAL LIBRARY

LIBRARY—A collection of books, pamphlets, etc., kept for reading and consultation; especially, such a collection arranged to facilitate reference, as by classification and indexing.

The origin of asepsis and of anesthesia, the development of surgery and of the specialties, the epochal discoveries of Roentgen and of Madame Curie, the work of O'Dwyer, the progress of serum treatment, and the many other lines of progress in medical science are all chronicled, step by step, in the volumes which make up the Rhode Island Medical Library. Through purchase, exchange and gift, the efforts of a few men of the past generation brought together this notable collection, one which could probably not be duplicated at the present time at any price.

The first name on the list of donors is that of Caleb Fiske, who, in 1855, started the collection with a gift of 72 volumes. George L. Collins donated over 1,000 volumes. Robert F. Noyes gave the valuable ophthalmic collection of his

uncle, Dr. J. F. Noyes. Horace G. Miller, who was chairman of the Library Committee for thirty years, donated his collection of books on the eye and ear, including invaluable files of journals on these subjects. Later, Charles V. Chapin gave to the library his collection of works on sanitary science, among the foremost in the country, and James H. Davenport donated a library of non-medical works by medical writers, the collection of which had been a life work. Other notable donations have been made by Usher Parsons, Timothy Newell, J. B. Tillinghast, Oliver C. Wiggin, George D. Hersey, and the Providence Athenæum.

During its first twenty years, the library was housed in the rooms of the Providence Franklin Society, in Arnold's Block, on North Main Street. In 1900, it was moved to rooms on the third floor of the Providence Public Library building. Then began a happy period in the life of the Medical Library. The quarters were light and spacious. The books were well arranged. Lists were posted on the cases to make it easy to find any book desired. Bound volumes of journals were arranged by states and countries, and could be found without the aid of a librarian. Here could be found late on any afternoon groups of physicians browsing among the books, and studying subjects of literary importance or medical interest. In 1909, the number of visitors who borrowed books was 1,296. Between 1903 and 1909, a card catalogue was prepared at considerable expense. The cards were carefully written and well arranged. They formed an efficient index to the library.

The present Rhode Island Medical Library building has been occupied since June, 1912. The stack room is of approved fire-proof construction. Eighteen double and three single steel stacks contain 2,000 steel shelves. The 6,000 feet of shelving for books is arranged in three stories. Iron staircases and a lift for books connect the three stories. In the stacks there is still room to provide for the natural increase in the size of the library for several years. The Miller and Davenport collections are housed in a separate room. In addition, some wooden book shelves have been erected in the reading room.

Somehow, on the way from the Public Library building to the new Medical Library building, the card catalogue, which had been prepared with such care and expense, lost step with the library,

and the two have never since become synchronized. The catalogue is still a list of the books which were in the library in 1909, but does not aid in locating a desired volume. To make room for the wooden book shelves, the catalogue has been moved to a dark corner in the stack room, where it is lost and forgotten. This may be the reason why interest in the library has languished so that it is now rarely consulted by members of the Rhode Island Medical Society. The library building serves only as a meeting place for the medical societies.

Dr. Harvey Cushing has likened a medical library to a calorimeter, indicating the degree of activity in the medical profession in the community. We hope that the waning interest in the Rhode Island Medical Library does not indicate a corresponding decline in scientific progress in the Rhode Island Medical Society.

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#### ATTENTION

Is especially called to certain activities of the R. I. Hospital staff, herein briefly outlined, by its committee; further reference to which will be found in the editorial columns of this issue.

The committee appointed to arrange for clinical pathologic conferences has the following to report.

The conference shall be held beginning Tuesday, February 12, and thereafter on the second and fourth Tuesdays of each month, at 12 o'clock (noon), in the large room off the pathology laboratories.\*

The following procedure is suggested: (1) Clinical presentation; (2) Demonstration of X-ray films; (3) Demonstration of post-mortem material; (4) Discussion.

The committee hopes that all members of the staff (active, consulting and courtesy) will make an effort to be present. Members of the medical profession of Rhode Island not on the staff are invited.

The following rules were presented to Dr. Rice and approved by him:

1. All internes and the visiting staff who are on duty are expected to be present if possible;
2. Internes shall not be available for ward rounds at this hour;



3. Operations shall not be scheduled for this hour except in case of emergency.

In order to get the conference started, the committee thought it best to prepare this definite plan. At the first meeting or later the staff shall make any changes that seem advisable.

RAYMOND G. BUGBEE,

ANTHONY CORVESE,

B. EARL CLARKE,

*Committee.*

\*During June, July and August, the conferences will be omitted.

## PROBLEMS IN DIAGNOSIS

### CLINICAL-PATHOLOGIC CONFERENCE

Rhode Island Hospital, March 12, 1929

#### CASE No. 1

Case reported by Dr. C. Gormly.

J. B.; age, 43; male, white, married; admitted Feb. 16, 1929.

C. C.: Pain in abdomen, belching of gas, vomiting, substernal discomfort.

P. I.: Ten days before admission, after eating, patient noticed peculiar sensation under sternum, felt weak, vomited, and collapsed. For past 4 years has noticed these peculiar sensations subinternally, often accompanied by belching of gas and pain in epigastrium. These attacks were aggravated by exercise. States that he was comfortable before eating, and that he could climb 3 flights of stairs without difficulty. After meals, the slightest exertion caused dyspnoea and substernal discomfort. Edema of ankles last spring only. Has had some hemoptysis and has lost some weight during past year. Has been somewhat hoarse for past 2 months. Nocturia 5-6 times.

P. E.: Cyanotic, dyspnoic, orthopneic, coughing up bloody sputum. Chest—moist rales and crackles; increased voice sound in right apex. Heart—sounds of poor quality; apex not visible or percussable; no murmurs. Extremities—no edema; blood pressure 100/80.

Blood Chemistry: Urea, 80; Creatinine, 2.0; Wasserman, negative; Hinton, negative.

X-ray: Findings consistent with Pul. Tbc.

E. K. G.: Marked myocarditis. Patient improved somewhat. He could lie back in bed when previously he had to lean forward. Color im-

proved. Much more comfortable. On the 6th day of admission, became suddenly quite cyanotic, had marked dyspnoea, and died very suddenly within 20 minutes.

Discussion: The discussion was opened by Dr. Fulton. He and others brought out the following points. The age was against coronary occlusion, but did not rule it out. The electro cardiogram is usually diagnostic in coronary occlusion. It this case it only suggests it. If possible, the patient's former physician should have been consulted to learn whether he formerly had a high blood pressure, etc. In coronary occlusion it is necessary to make the diagnosis early if treatment is to be properly carried out. Fever and leucocytosis are frequently present in coronary occlusion.

Dr. Gormly then mentioned some of the points of differential diagnosis between angina pectoris and coronary occlusion. In angina the patient is tense and immobilized, while in coronary occlusion he is restless. In angina the blood pressure remains high, while in coronary occlusion it falls. In angina the pain involves the left bronchial region and the jaw, while in coronary occlusion it spreads across the chest and involves both arms. Nitrites relieve angina, but have no effect in occlusion. In coronary occlusion there is leucocytosis fever and a pericardial friction rub. These are absent in angina. The longer duration of the attack also favors coronary occlusion.

Dr. Gormly mentioned that some of the things to be considered in the differential diagnosis were angina pectoris, coronary occlusion, and acute upper abdominal conditions such as pancreatitis, perforated gastric ulcer and ruptured gall bladder. The clinical diagnosis in this case was coronary occlusion.

#### *Diagnostic Problems*

Pathological findings and diagnosis will be found upon another page.

#### CASE No. 2

Case Reported by Dr. A. M. Burgess.

M. S.: age, 40; female, white, widow; admitted March 4, 1929.

C. C.: Patient, irrational. History obtained from mother.

P. I.: Onset about 8 weeks before admission (1/15/29) characterized by malaise and physical weakness. About two weeks later she became definitely worse and had to go to bed. She was

seen by her physician, who said it was "congestion of lungs which settled in kidneys." Because of the abdominal pain, she was seen later by Dr. McCann, who referred her to hospital. There was some cough throughout illness, fever outstanding from onset, sweats frequent. Diarrhea one day, otherwise normal bowel action. One week before admission patient became irrational, which has persisted until present.

P. E.: T. 103, P. 140, R. 30. Pulse barely palpable. A well developed but poorly nourished white female adult lying flat in bed. Facial expression tired and anxious. Eyes sunken and general appearance almost moribund.

Lungs: P. N. resonant throughout. B. S. normal. Many moist rales in both bases.

Heart: No enlargement or displacement. Sounds are poor in quality, rapid but regular. Faint blowing systolic murmur at apex.

Abdomen: Tenderness questionable because of mental state. No rose spots seen. Generalized rigidity of wall making palpation of organs impossible.

Extremities: Tremor of hands and carphologia noticeable.

Mental State Irrational, muttering delirium, apathetic and dull.

Laboratory: Urine one week before admission revealed several pus cells, otherwise negative.

White blood count, 7,400. Blood culture, sterile. No other work done.

3/5/29: Patient gradually became weaker, temperature rising from 97 degrees to 106.5 degrees within 18 hours. Death promptly ensued.

Discussion: Because of the lateness of the hour there was no discussion.

#### CASE No. 1

Demonstration of post-mortem material (Dr. Clarke):

Heart: The heart weighs 570 grams. There is hemorrhage into and fibrin on the epicardium at the apex. There is much sclerosis of the coronary arteries. At a point about 3 cm. from its orifice the descending branch of the left coronary artery is completely occluded. A large area of the myocardium of the apex and anterior wall of the left ventricle is yellow and necrotic. The endocardium in this region is covered with thrombus.

Lungs: The right lung weighs 1250 grams, the left lung weighs 1120 grams. Almost the entire lung substance is uniformly consolidated.

Liver, spleen, and kidneys: These organs all show marked chronic passive congestion.

PATHOLOGIC DIAGNOSIS: Coronary sclerosis; coronary occlusion; infarction of myocardium; lobar pneumonia (bilateral); chronic passive congestion of parenchymatous organs.

Demonstration of post-mortem material (Dr. Clarke):

#### CASE No. 2

Intestines: In the ileum, Pyers patches are swollen and ulcerated. Within the colon are very numerous swollen and ulcerated lymph nodules. These are most numerous in the caecum and adjacent portion, but some are seen well down in the sigmoid.

Mesentery: The mesenteric lymph nodes are enlarged and dark red in color. When cut across, some show necrosis.

Spleen: The spleen weighs 350 grams. It is red, soft, and pulpy.

Liver: The liver weighs 1650 grams. It is pale, opaque, and dull in color. Tiny areas of focal necrosis are seen.

Kidneys: The kidneys show marked cloudy swelling. The mucosa of the pelvis is congested and swollen.

Bacteriology: A pure culture of *B. Typhosus* was obtained from the gall bladder bile.

Pathologic diagnosis: Typhoid fever.

#### LETTER TO THE EDITOR

TO THE EDITOR

April 18, 1929.

In reading the obituary of the late Doctor James Raymond Morgan, March, 1929. I regret to notice the omission of an important line from the record of his service of the Rhode Island Hospital; line 18, of the second column, page 46, should include the item: *Surgeon to Department of the Skin, May, 1891, to October, 1909.*

Friends of Doctor Morgan will wish to write that line in their copy of the *Journal*.

Faithfully yours,

CHARLES H. LEONARD.

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## OBITUARY

RANSOM HARVEY SARTWELL, M.D.

Ransom Harvey Sartwell, M.D., was born on the 30th day of December 1887, in the town of Mooers, Clinton County, New York. He came of a sturdy stock engaged in agriculture. His father, Edwin Sartwell, and his mother, Olive Adsitt, were both natives of Mooers. He was the youngest of a family of ten children. His preliminary education was received in the public schools of Mooers.

He decided to take up the study of medicine and in 1911 received the degree of Doctor of Medicine from the University of Vermont College of Medicine. Immediately following graduation, he began the practice of his profession in Ellenburg, New York, and after one year removed to Mooers, his native town, where he practiced for two years. At the end of that period he was appointed physician and surgeon to a Corporation located in Standish, New York.

During these years of his early practice he was considering the question of adopting some specialty for his life work. Psychiatry made its appeal to him and he sought an opportunity to enter this field, with the result that he applied for and received an appointment as a Junior Assistant Physician at the State Hospital for Mental Diseases at Howard, Rhode Island. He entered upon his duties in August, 1915, where he remained until September, 1917. While he had attracted the attention of the Administrative Board having charge, not only of the State Hospital for Mental Diseases, but in addition of the Penal and Reformatory institutions of the State. He was invited to transfer his activities from the State Hospital to these institutions as Resident Physician. These included the State Prison and Providence County Jail, the House of Correction, the Sockanosset School for Boys and the Oaklawn School for Girls.

The quality of his work in Rhode Island earned for him the commendation of officials, so that when sought as a senior assistant physician for the Foxboro State Hospital at Foxboro, Massachusetts, he was highly endorsed for this advancement by the Administrative Board of the Rhode Island Institutions, though reluctant to part with his services. This change appealed to him be-

cause it brought him more intimately in contact with clinical psychiatry. He filled this post from March, 1918, to September, 1923. While here he demonstrated his aptitude for dealing not only with the practical side of psychiatry as presented in the problems of individual and ward management, but his ability as an executive assistant, so that when an Assistant Superintendent was being sought at the Worcester State Hospital in Massachusetts, he was chosen for this responsible position, which he filled with entire satisfaction until August, 1924.

He was now invited by the Director of State Institutions with the authorization of the State Public Welfare Commission, to return to Rhode Island, this time as the Superintendent of the State Infirmary, an institution for the aged, the infirm, those afflicted with chronic physical illnesses, having in its population also mental defectives and in addition conducting a maternity department; this comprising a heterogeneous population, varying from infants to the very aged, the great majority of whom as is the case in most almshouses, are usually regarded as thoroughly institutionalized and with nothing in life except to eke out a more or less vegetative existence. Dr. Sartwell did not accept in the main these traditions but devoted much attention to furthering the work of social service among these people.

The results of Social Service as applied to the inmates of the State Infirmary were the returning to the Community of a comparatively large numbers of individuals, some of whom had been in the Institution from fifteen to thirty years who had been looked upon as permanently institutionalized, but who in numerous instances were returned to partial and in some instances even to a complete economic status.

At the National Conference of Social Work held in Cleveland, in 1926, he read a paper which attracted wide attention, the subject of which was "Social Research in an Infirmary," in which he advanced his belief that contrary to the usual conception there existed in Infirmarys, Almshouses, city and town farms a real opportunity for reconstructive and worthwhile social work.

Another outstanding feature of his work while at this institution was the furthering of Occupational Therapy. This is described in a paper entitled, "Occupational Work in an Infirmary," which he was invited to read at the 10th Annual

Meeting of the American Occupational Therapy Association at Atlantic City, in 1926.

The next promotion was to the Superintendency of the State Hospital for Mental Diseases at Howard, Rhode Island, where he served under the same administrative commission as at the Infirmary. He entered upon his duties on October 1, 1926, his administration covering a period of a few days over twenty-seven months.

When he entered upon this office he had been prepared by an unusual training and variety of experience for this task. Some projects for material extension of the Hospital plant were under consideration when he assumed office. He showed at once his capacity in this direction by suggesting plans which have materialized into exceedingly attractive, commodious and home-like quarters for patients of the quiet chronic class, with facilities and equipment of the most approved kind for therapeutic procedures for this type of patient, but containing individuals, too often overlooked in crowded institutions, for whom disease has not closed forever the door to recovery.

In the administration of the internal affairs of the hospital there were progressive changes on foot which were beginning to add materially to the adequacy of the medical care and comfort of its patients.

The latter part of this administration was a most critical period in the history of the public institutions of Rhode Island, the work of which was the caring for the wards of the State of all types, and ages. For owing to certain episodes, such as may occur anywhere connected with the various activities of such work, these institutions, not one but all, were brought into a publicity more or less sensational which was calculated to arouse criticism and disfavor in the mind of many people. Dr. Sartwell lived through this trying period, still carrying on his work undaunted, with never a show of bitterness or resentment, but with an honesty of purpose and a courage born of his conscientious discharge of duties as he saw them.

In the meantime by his qualities of heart and mind and his solicitude for his charges, Dr. Sartwell had won the esteem of patients, their relatives and employees and officials with whom he was in intimate contact. Then there came a fate-

ful evening which took him from this life without an instant of warning.

On the evening of the 11th of January, 1929, he had been a speaker at a local church at a "Fathers' Night" meeting. Returning to his residence in the hospital grounds in the latter part of the evening, while seated, alone at the moment, in the living-room of the lower floor, the window shades of which were not drawn, he was shot from without and instantly killed by a patient, who several months before had escaped from the hospital and whose whereabouts all this time was unknown, but who was found and taken into custody a few hours after this deed.

Dr. Sartwell, besides being a member of the Providence Medical Association had a membership in the following organizations: The American Medical Association, the American Psychiatric Association, New England Psychiatric Association, Massachusetts Medical Society, Massachusetts Society of Psychiatry, A Fellow of the Rhode Island Medical Society, member of the Rhode Island Medico-Legal Society, a director of the Rhode Island Society for Mental Hygiene and a member of the Rhode Island Society of Neurology and Psychiatry. He was secretary at the time of his death of the Rhode Island Alumni of the University of Vermont, a member of the Exchange Club of Providence and a member of St. Albans Lodge of Masons, Foxboro, Massachusetts.

Dr. Sartwell was twice married. His first wife deceased in 1920. Of this union there are two young children, a son and a daughter. His second marriage occurred in 1924. By this marriage he leaves a widow but no children. Of his near kin he leaves a brother, Dr. Edwin W. Sartwell, a practising physician of Peru, New York, and six sisters.

In preparing this account of the life of Dr. Sartwell there are encountered among those who have been thrown with him in official relations, in various social contacts, and as intimates, expressions of the highest respect, sentiments of warm regard, mingled with profound grief at the untimely and tragic closing of a life which gave promise of a long and conspicuously useful career; for we have to recall, that during the comparatively brief time Dr. Sartwell was permitted to work among us he exemplified in the highest degree a devotion to service for the unfortunates of all classes who



came under his care. His was an instance of life of exalted purpose united with a conscientious adherence to his convictions of right.

The underlying spirit that actuated this man cannot be better illustrated than by quoting from his published writings where he says, "SERVICE is even GREATER SERVICE when rendered to broken humanity, and those who need it most. One's manner and attitude must be tempered with a love for that cause which is as old as the human race, as noble as the CAUSE OF FREEDOM—THE CAUSE OF HUMANITY."

Among Dr. Sartwell's characteristics may be mentioned his ever present thoughtfulness for others, a spirit of generous consideration in his dealings with others, but never to the point of compromising discipline among his employees.

In the death of Dr. Sartwell there was brought to a close at the very height of physical and mental vigor a life of honest and persistent effort, manifesting qualities and attainments which presaged a career of unselfish devotion to a lofty cause. By his death the Providence Medical Association is deprived of a colleague who was a constant attendant upon its meeting and who while devoted to a special branch of medicine had a keen interest in following the progress of the day in general medicine. The Medical Profession is deprived of a member held in high esteem; Psychiatry, of one who dedicated himself with unstinted zeal to this special calling and the State of an official with an eye single to its service.

ARTHUR E. MARTIN, M.D.,  
JOHN E. DONLEY, M.D.,  
ARTHUR H. HARRINGTON, M.D.

March 4, 1929.

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## SOCIETIES

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### RHODE ISLAND MEDICAL SOCIETY

#### SPECIAL MEETING, HOUSE OF DELEGATES

A special meeting of the House of Delegates was called for March 20, 1929, at the Medical Library at 4:50 P. M., the President, Dr. A. H. Harrington, presiding.

The primary purpose of the meeting was to pass upon the Resolution adopted at the General Meeting in March which instructed the Committee on Legislation to oppose the passage of an amendment introduced into the General Assembly modifying the Workmen's Compensation Act, which fails to provide for the injured employee having the choice of physician treating his injuries. In order to clarify the situation, Mr. Cole of the Federal Mutual Insurance Company was asked to be present to present the point of view of the employer and the Insurance Company.

Mr. Cole stated that the costs of insurance to the employer had been greatly increased by reason of a small group of physicians carrying injuries to the extreme limit of the law, which in the opinion of Mr. Cole did not require so extensive treatment.

The question of the Insurance Company establishing clinics where all injured employees would be treated by physicians of the Insurance Company's choice was brought up in the discussion, and Mr. Cole firmly insisted that, so far as he could speak for his own company, there was no idea of there being established clinics for this purpose.

It was further brought out that it was the idea of the insurance companies to furnish a list of reputable physicians to whom injured employees could be sent in the hopes of eliminating the activities of physicians who are not desirable from the point of view of the insurance companies. It was not denied that the amendment specifically gave to the employer or the insurance company acting as his agent the right to choose the physician treating the injured employee.

Various discussions by many members of the House of Delegates was followed by a motion that the Resolution of the General Meeting instructing the Committee on Legislation to oppose the passage of this amendment was duly made and seconded and passed.

Adjourned.

J. W. LEECH  
*Secretary*

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### PROVIDENCE MEDICAL ASSOCIATION

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. Arthur H. Ruggles, Monday eve-

ning, March 4, 1929, at 8:50 o'clock. The records of the last meeting were read and approved.

A letter of appreciation from the niece of Dr. Davenport was read. Dr. Harrington read an obituary on Dr. Ransom H. Sartwell. It was voted to spread this on the records, send a copy to the family and one to the RHODE ISLAND MEDICAL JOURNAL. The President appointed as obituary committee for Dr. John F. Gannon; Drs. Henry J. Hoye, John G. Walsh and William H. Magill.

Dr. William B. Cutts presented a young boy with a very bad fracture of the elbow which by repeated trails at reduction and numerous X-rays resulted in almost complete recovery.

The first paper of the evening was by Mr. Philip Drinker of the Harvard University School of Public Health. A demonstration of an apparatus for the prolonged administration of artificial respiration. He gave a talk on the methods of artificial respiration and stated that the pulmator was valueless. Manual methods and the use of ninety-five percent oxygen with five percent of  $\text{CO}_2$  is the usual method of rescue crews. A series of graphic charts showed the pressures obtained with his apparatus which he demonstrated.

The second paper by Dr. Charles F. McKhann of Children's Hospital, Boston, was on Infantile Paralysis and artificial respiration with moving pictures. He presented moving pictures demonstrating cases and showed the Drinker apparatus in use. In the true bulbar type the paralysis may be recovered from if the patient can be kept alive a few days and here the apparatus may be of great use. He gave a short talk on the diagnosis and spoke hopefully of the use of serum. The papers were discussed by Dr. Albert H. Miller, Dr. Herman C. Pitts and Mr. Drinker.

The meeting adjourned at 10:45 P. M. Attendance 58.

Collation was served.

Respectfully submitted,

PETER PINEO CHASE, *Secretary*.

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. Arthur H. Ruggles, Monday evening, April 1, 1929, at 8:55 P. M. The records of the last meeting were read and approved.

Frank B. Littlefield, Agostino Sammartino and Harvey E. Wellman, having been approved by the Standing Committee, were elected to membership. William T. Knoop having been approved by the Standing Committee, his application was discussed and he was elected to membership.

Dr. Herbert G. Partridge reported a case of Diabetic Coma with Toxemia of Pregnancy resulting fatally.

The president appointed as an obituary committee for Dr. John P. Fennessey:

Dr. William P. Buffum, Jr., reported a case of Rheumatic Heart Disease. This child had been demonstrated here by Dr. Robey at the meeting of the U. E. Heart Association two years ago. Dr. Buffum first gave a summary of the pathology and during the reading of the history elaborated on the characteristics of the disease. The child ten years of age had tonsillectomy at five and his illness developed at six. The patient appeared strong and hearty. The case was discussed by Drs. Mowry, Perkins, Fulton, Mathews, Wolff and Buffum.

The paper of the evening was on Heart Block by Dr. Thomas Conrad Wolff, Dispensary Physician, Johns Hopkins Hospital. He first gave a short summary of the embryology, anatomy and physiology of the mechanism controlling heart beat. Block may be caused by therapeutic agents as digitalis bodies, toxins or mechanical conditions as in rheumatic diseases, tumors, etc. He then discussed the types, aspects and degrees of block and reported a number of cases. Atropin, adrenalin, thyroid extract, barium chloride, rest and digitalis are all of value according to the type. Stokes Adams attacks mean death within three years at most. Any heart block means a narrow margin of myocardial reserve. Several electrocardiograms were shown. The paper was discussed by Drs. Burgess, Fulton, Westcott, Mathews, Wells, Lawson, Ruggles, Perkins and Wolff.

The meeting adjourned at 10:50 P. M. Attendance 68.

Collation was served.

Respectfully submitted,

PETER PINEO CHASE, *Secretary*.

## AMERICAN OTOLOGICAL SOCIETY

AMERICAN OTOLOGICAL SOCIETY SEEKS \$2,500,000  
TO PREVENT DEAFNESS

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\$500,000 to be Raised Before July 1

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A plan, world wide in scope, for research into the cause, cure and prevention of deafness has just been announced by the American Otological Society. While a fund of \$2,500,000 will eventually be sought to finance the complete plan, an immediate campaign to raise \$500,000 by July 1st, and thus continue a program of research started through a grant by the Carnegie Corporation four years ago has been started. The campaign was launched at a dinner given at the New York Academy of Medicine by the Board of Trustees of the Research Fund on Tuesday, March 12th, to a group of interested laymen and physicians.

Dr. Edward B. Dench, New York otologist, in a brief address at the dinner, emphasized the social and economic handicaps which victims of deafness must face. He spoke of the inadequacy of the present scientific knowledge on the analysis of diseased conditions of the ear.

"In the pathological departments of all our hospitals in New York, and they are most excellently manned, I personally know of no pathological department in this city which could intelligently deal with microscopic analysis of the many conditions found in the temporal bone which cause progressive deafness. In other words, progress of investigation of this kind must be slow. To a certain extent it will be necessary to use our funds to train men in this special work, particularly in the preparation of specimens and in the interpretation of microscopical pathological conditions.

"It is important, first of all, to have exact histories with hearing tests on a large number of patients, both those suffering from some evident disease of the ear and also upon normal subjects. Then when the unfortunate comes to the post-mortem, the clinical history, the hearing tests and the microscopical changes of the temporal bone will give us exact information."

In announcing the campaign, Dr. Arthur B. Duel, chairman of the Research Fund Board of Trustees, spoke of the necessity of completing the \$500,000 fund by July 1st. He announced that Edward S. Harkness had already pledged a gift

of \$100,000 on condition that the remainder of a half-million dollar fund be raised by July 1st. Starling W. Childs of New York City has also pledged \$25,000 with the same provision. The income from this fund will be used to continue work begun in June, 1926, under a grant of \$90,000 by the Carnegie Corporation. This sum was given to begin and partially finance for five years a program of continuous and correlated research in otosclerosis, the hereditary form of chronic progressive deafness.

A report of the work done to date by the Scientific Committee of the Otological Society was read by Dr. Duel. "Under the personal supervision of a committee headed by Dr. Norval H. Pierce of Chicago, Illinois," he said, "a central bureau of research was established at the Academy of Medicine in New York City. Here all records of the activities are kept, and from here all communications and bulletins relative to the research are sent out.

"At the very beginning, the committee began the collection, abstraction and translation into English of all literature on chronic progressive deafness. This has just been completed to date, and is now in the press. The completed volumes will be available shortly, and will be of inestimable value.

"In addition, under the personal direction of various members of the committee, a number of studies by experts in research are under way in laboratories and hospitals.

"Professor Bast, at Northwestern University Medical School, has been making and will continue for years a study of the development of the bony capsule of the internal ear. Already many important facts hitherto unknown have been brought out. This has a direct bearing on our problem.

"Professor Wittmaack, of Hamburg, Germany, is working on apes in an effort to experimentally produce otosclerosis. If he should succeed we will be well on our way to the solution of our problems.

"Dr. J. C. Aub, of Harvard, and Dr. Eugene A. Crockett have studied selected cases of otosclerosis in all stages of development at the Massachusetts General Hospital by treatment by parathyroid extract and a balanced calcium diet. It is thought that the results warrant a hopeful outlook in cases taken at the very beginning of the disease. This is to be verified by a repetition of

the experiment at the Montreal General Hospital before it is given out. If verified, the work will be broadcast by literature from the Central Bureau to the medical profession throughout the world.

"At the George Williams Hooper Foundation for medical research at the University of California a study of bone changes in animals under calcium diet is being carried out.

"Professor Charles B. Davenport, of the Department of Genetics of the Carnegie Institution of Washington, is conducting a study of the genetics of otosclerosis in families. List of otosclerotics are being formed and an analysis of families with reference to the Mendelian aspects of the inherited defect is being carried out. Thirty-six families have already been listed and very important facts have already come to light. At least one hundred families will have to be studied before conclusions can be made. Eventually we hope to have a card index of every family in the country in which it will be possible to keep accurate statistics.

"Over two thousand hospitals throughout the country have been canvassed for autopsy material in cases which have had functional tests of hearing made before death. One hundred and fifty-seven hospitals are now co-operating in furnishing such material. Professor Sandor of Budapest has arranged to send anatomical material directly to us. An alliance with the laboratories of Johns Hopkins Hospital has been made whereby all such material in the east will be prepared for microscopical examination and study."

"The work we do in the future," Dr. Duel said, "will depend upon our success in raising a sufficient permanent fund to pay for laboratory workers to continue these activities which we have begun. If a sufficient amount is subscribed, we plan to enlarge our research to cover many other problems in otology."

Chancellor Elmer Ellsworth Brown of New York University, and J. DuPratt White, a lay advisor of the Board of Trustees, also spoke at the dinner. Mr. White stressed the point that research workers needed life-long training and should be relieved of financial worries in order to work to the best advantage. He declared that they should receive adequate pay in order to relieve their minds for the concentration which their work requires.

#### RHODE ISLAND STATE NURSES ASSOCIATION

The Rhode Island State Nurses Association held its Quarterly Meeting on April 3rd in Ray Hall, Butler Hospital. The President, Miss Annie M. Earley, presided, and there were about 150 members present.

The objective and the work of the Rhode Island League of Women Voters was explained by the Director of that Organization, Miss Virginia Heal. Miss Heal outlined the various bills which have been under discussion during the 1929 session of the General Assembly, with special emphasis on the bills affecting public health; she also stressed the importance of a knowledge of what is going on in legislation, both State and National.

The Harmon Plan for Annuity for Nurses was explained by Miss Winifred L. Fitzpatrick. This plan is similar to the Teachers Insurance and Annuity Association organized some years ago by the Carnegie Foundation. The organization expenses of the Harmon Plan for nurses were provided by a gift from a fund of \$50,000. by the late Mr. William E. Harmon, the first president of the Harmon Foundation. The plan is for a deferred annuity beginning at any age between 50 and 65 years, as elected by the nurse. Each nurse who joins the annuity plan makes a monthly deposit of at least \$5. per month. The amount of the deposit may be \$10., \$20., \$30., or more, but must be a multiple of five. Only registered nurses are eligible for membership in the plan, the important features of which are:—

1. A permanent monthly income, which once begun, continues throughout the remainder of the nurse's life.
2. No medical examination is required under the plan.
3. Convenience in accumulating a fund, and in receipt of income charges.
4. No loss or forfeiture of any deposits; no surrender charge.
5. Absolute safety for investment.
6. In case of any emergency the privilege of borrowing against or withdrawing all deposits at any time previous to the beginning of the annuity payments.
7. In case of death the immediate cash payment to beneficiary or estate the full credit balance on deposits.
8. An organization through which funds from legacies, endowments, gifts, excess interest, or



other sources, may be administered for the benefit of the nurse.

9. Membership in an association organized to assist registered nurses, guided by trustees and officers chosen by the members themselves.

The Metropolitan Life Insurance Company has offered to be the depository for the funds.

The following conventions and meetings of interest to nurses were announced and outlined by Miss Gardner:—

1. New England Division of the American Nurses Association to be held in New Haven April 11-13.

2. New England Health Institute to be held at Hartford, April 22-26.

3. International Council of Nurses to meet in Montreal July 8-15.

The President announced that the nursing organizations and individual nurses of the state had contributed \$1478. to the work of the Committee on the Grading of Nursing Schools. This Committee is making a five-year study of nursing conditions and schools of nursing with a view to grading the latter. The first report of the Committee in the form of a book entitled "Nurses, Patients and Pocketbooks" deals with a study of the economics of nursing as conducted by the Committee. The chairman of the Committee is Dr. William Darrach, Dean of the College of Physicians and Surgeons, who with Dr. Winford H. Smith, Director of the Johns Hopkins Hospital, Baltimore, represent the American Medical Association on the Committee. The American College of Surgeons is represented by Dr. Malcolm T. MacEachern and Dr. Bowman C. Crowell, both of the American College of Surgeons, Chicago. The American Hospital Association is represented by Dr. Joseph B. Howland of the Peter Bent Brigham Hospital, Boston, and Dr. Burt W. Caldwell of Chicago. The American Public Health Association is represented by Dr. Charles E. A. Winslow, Professor of Public Health, Yale University, and Lee K. Frankel, Ph. D., Vice President of the Metropolitan Life Insurance Company. Members At Large on the Committee are Mrs. Chester C. Bolton, of Cleveland; Sister Domitilla of St. Mary's Training School for Nurses, Rochester, Minnesota; Henry Suzzallo, Ph. D., Trustee Carnegie Foundation for the Advancement of Teaching, New York City; Samuel P. Capen, Ph. D., Chancellor, Uni-

versity of Buffalo, New York; Edward A. Fitzpatrick, Ph. D., Dean of the Graduate School, Marquette University, Milwaukee, Wis.; W. W. Charters, Ph. D., Professor of Education, University of Chicago; and Dr. Nathan B. Van Etten, General Practitioner, New York City.

All nurses and doctors are urged to read this first report of the Grading Committee.

A demonstration of a home visit to a tuberculous patient was given by four members of the District Nursing Staff. The demonstration illustrated the co-operation received by the Association from various social agencies in Providence, and also the splendid results obtained by the admission of an incipient case of tuberculosis to the Wallum Lake Sanatorium.

Following the meeting and demonstration the Organization was the guest of the Nursing Staff at Butler Hospital, at a tea and a social hour.

## HOSPITALS

### MEETING OF THE MEMORIAL HOSPITAL STAFF

HELD APRIL 4, 1929.

*Meeting called to order at 9:15 by President James L. Wheaton, M.D.*

*Minutes of the last meeting read and approved.*

The discussion of the evening being under the charge of the Medical Service of the Hospital, Dr. C. F. Sweet presented two cases.

- (1) Amebic Dysentery. Discussion by Drs. Jones, Batchelder and Bourne. The latter gave an interesting resume of her experiences in China in the treatment of this disease.
- (2) Duodenal ulcer. Discussion by Drs. Jones and Batchelder. The patients on whom the above diagnoses were made were present and made a short statement as to their present condition.

The O. P. D. Medical Service represented by Dr. K. M. Barr presented two cases of so-called Indigestion which on careful study proved to be gastric carcinoma. She also presented the history of one case of Diabetes.

President Wheaton stated that the Surgical Service will have charge of the next meeting May 2, 1929.

The President then took occasion to present to the members of the Staff the new Superintendent of the Hospital, Dr. Walter E. Wright, who spoke briefly expressing his desire for co-operation.

Previous to the meeting the Deshell Laboratories Incorporated of Chicago, through their representatives, Messrs. Christiansen and Pine presented a film showing the peristaltic motion of the stomach and intestines under vagus stimulation. The animals used were a dog, rabbit and a cat. The film was clear and interesting to the Staff members who expressed their appreciation through President Wheaton.

Meeting adjourned at 10:30 P. M. There were 23 members present.

STANLEY SPRAGUE, M.D.  
*Secretary Pro Tem.*

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## NEWS ITEMS

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The *Journal* noted with agreeable satisfaction that the American College of Physicians at the last meeting of this organization recently held in Boston, honored Dr. A. M. Burgess, of this city, in electing him to membership.

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Dr. Frank Browning Littlefield has recently opened an office at 133 Waterman St.

Dr. Littlefield will do a general practice.

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## BOOK REVIEW

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*SYPHILIS*—by Charles C. Dennie, M.D., Harper and Brothers Publishers is an excellent treatise on syphilis for the general practitioner. The book may be roughly divided into three parts:

- (1) pathology and diagnosis of syphilis in general,
- (2) syphilis of the various systems of the body,
- (3) treatment.

The book is complete and should be of great aid to the practitioner. Binding and printing are good.

## MISCELLANEOUS

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### STARVATION AS A THERAPY

Fasting as a cure of diseases other than those due to overeating runs back to antiquity. It is frequently bound up with religious practices and prayer under the assumption that abstinence from food "purifies" the body and renders it less susceptible to the influences of evil and more susceptible to the influences of good. When fasting is united with prayer one cannot know whether the favorable outcome is due to the fasting or to the prayer. In a recent address before the Medical Society of London, Dr. Edmund Spriggs<sup>1</sup> reviews the history of fasting as a therapy in earlier times, the modern indications for fasting in disease, and the dangers involved in the therapy of fasting. The physical, chemical and mental changes involved in prolonged starvation have been subjected to excellent studies both on man and on animals in recent years. Organs lose weight, not uniformly, and some, such as the heart and brain, lose at a much slower rate than organs such as the pancreas, liver and spleen, and the skeletal muscles. The basal metabolic rate and the blood pressure are gradually lowered during a prolonged fast. Complete starvation, particularly in an obese person, leads to a mild degree of acidosis. The changes in the blood during starvation are not great. There is a tendency to a slight increase of the non protein nitrogen and slight but not consistent or persistent decrease in the blood sugar. A healthy, well nourished man may fast for from thirty to forty days without demonstrable permanent injury, and dogs may fast without apparent injury for a much longer time. All this, of course, is under conditions when the individual receives a liberal allowance of water. After the rapid loss of weight during the first few days of fasting, an adult person on complete starvation may lose weight at the rate of about half a pound a day when no excessive physical work is being done. Despite the complete absence of food in the alimentary canal for from thirty to forty or more days, the alimentary canal still harbors at the end the flora common for this organ. Fasting for the purpose of sterilization of the alimentary canal is a failure. Complete starvation is not painful. The essential subjective symptoms are fatigue, and the predominance in consciousness of thought of food

and eating. The sex urge is decreased. Dr. Spriggs refers to the wartime undernutrition experience of central Europe. Good clinical studies of these conditions have been reported. At no time, of course, was there complete starvation in Germany or Austria. There was rather prolonged undernutrition and probably, in some cases, there were qualitative deficiencies in the diet, accompanied by unusual mental stress and anxiety, worry and fear. Under this restricted food intake in central Europe cases of diabetes, gout and obesity were greatly improved or decreased in number, while nervous disorders increased, as did tuberculosis and anemia. Patients with myxedema appeared to do badly. Chronic diarrheas and digestive disorders were increased, but this may have been due to the abnormal character of the available food rather than to the partial starvation.

Dr. Spriggs outlines the results of the clinical experience with starvation in local diseases of the alimentary canal, in epilepsy, in obesity, in diabetes, and in diseases of the circulation. He concludes that complete fasting is beneficial in appendicitis, peritonitis and ulcers, largely on the basis of the rest of the digestive organs afforded by the absence of food. The reasons assigned for the apparent benefits of fasting in alimentary canal disorders do not seem convincing, since it is now known that the digestive glands continue to secrete and the alimentary canal continues to exhibit motility all through a prolonged fast. Short complete fasts of from two to three days are said to be valuable in a number of other diseases, such as pneumonia, severe fevers, acute nephritis, chronic uremia, migraine, hyperthyroidism, local infections, phlebitis, rheumatism, rickets, and the vomiting of pregnancy. A number of physicians have reported diminution in the number and intensity of epileptic attacks in patients with idiopathic epilepsy during fasting. This appears to be due, not to the fasting directly but to the acidosis accompanying the fast. On the resumption of a normal diet the condition of the patient returns to the original state. Dr. Spriggs discusses in greater detail the regimen of fasting in obesity. He recommends not complete abstinence from food but a severe restriction of the calory intake to a level of from 1,000 to 1,300 calories. This restriction should be horizontal rather than vertical, so that the patient obtains some of every ingredient necessary for the body welfare. The calory restriction is usually coupled with a

definite increase in physical activity. Dr. Spriggs appears to have had success with this therapy not only with those obese from excessive eating but even in those obese in consequence of apparently hereditary factors ("endogenous" obesity). The pains and discomforts that some of these patients may exhibit after ten days or two weeks on this low calory intake are said to be quickly relieved by a meal. "Serious symptoms seldom arise during the treatment, and those formerly present generally disappear. Specially striking is the loss of breathlessness." This is ascribed to the removal of fatty tissue among and within the muscle fibers of the heart. Anemia, it is reported, does not develop under this regimen. Dr. Spriggs remarks that obesity is often complicated by other disorders, and as a general rule after treatment by starvation the accompanying disease is improved. Two conditions especially can nearly always be treated in this way: circulatory disorders and mild glycosuria. Patients with high blood pressure benefit almost invariably by reduction in weight, if they are overweight, and in the majority of other patients the blood pressure is also reduced. Dr. Spriggs considers that a temporary short fast is still of value in diabetes, and mild diabetes may be controlled by moderate calory restriction without the use of insulin. He points out that children and cachectic and tuberculous individuals should not be deprived of food for more than a comparatively short period.

Except in cases of obesity clearly due to overeating or under exercise, the fasting therapy is obviously not a cure-all but merely an aid to other remedial measures. The complications that may arise in a prolonged fast and the dangers to life and health that may eventuate in a starving person who is sick to begin with are such that fasting as a therapy is not safe except in the hands of competent physicians.

According to Dr. Spriggs, fasting in an otherwise healthy person decreases resistance to infectious diseases. This may be seriously questioned, at least in cases of complete fasting not extending over longer periods than from fifteen to thirty days. As to the ways in which fasting may improve the general body health, there is little reliable information except for those obviously obese from overeating, in which case it may be a matter of less work for the heart, lessened tendency to fatty infiltration of essential tissues, and lessened strain on the pancreas and the liver. Dr. Kunde<sup>2</sup> has

shown that in complete fasts of fifteen days or more in man and from thirty to fifty days in dogs there is an increase in the basal metabolic rate extending over many months after the fast has been broken. In dogs there is also an increased secretion of gastric juice and greater economy in the utilization of nutrients by the tissues. If these results should be confirmed and extended, some of the apparent benefits from fasting may be rendered understandable on these lines. Further, since in fasting the glandular tissues, among them the liver, pancreas, gastro-intestinal mucosa, thyroids and gonads, suffer great loss of weight, it is not improbable that in realimentation these organs respond with increased cell division and therefore may be said to be partly rejuvenated. This matter requires further investigation before it can be put forth as a basis for fasting therapy.

It has been suggested that nature itself points toward a fasting therapy in those diseases that are accompanied by decreased hunger and appetite. But the success of the newer regimen of "feeding fevers" questions the inference. The ills of over-eating and the dangers of partial starvation are relative, and excessive claims are advanced in both directions.

Among some people in this country, fasting as a road to health has become an unscientific if not an injurious fad. On the other hand some physicians go to the other extreme in holding that short periods of complete abstinence from food, and longer periods of severe restriction in calory intake, are always dangerous proceedings. Some of Dr. Spriggs's conclusions are still tentative. More controlled observations both in the clinic and in the laboratory are needed before the final word can be said on the value and the limitations of fasting. But if there is real albeit limited merit in the fasting therapy, its aroma of cultism and occultism is no deterrent.—*Jour. A. M. A.*, April 6, 1929.

<sup>1</sup>Spriggs, Edmund: *Lancet* 1:485 (March 9,) 1929.

<sup>2</sup>Kunde, M. M.: *J. Metab. Research* 3:399 (March) 1923; *Am. J. Physiol.* 68:389 (April) 1924.

### CHRONIC ULCER OF THE LEG

Three hundred cases of chronic leg ulcer have been treated by Joseph W. Sooy, Baltimore (*Journal A. M.*, April 6, 1929), with a modified Unna's

paste. Complete healing has occurred in 85 per cent and 15 per cent show satisfactory progress. The formula of the paste that Sooy is using is glycerin, 1,900 Gm., 1,425 cc.; gelatin, 625 Gm.; water, 1,900 cc.; zinc oxide, 250 Gm.; phenol, 1.50 per cent of total volume, making a total of 4,675 Gm. or 10 pounds, which is sufficient for seven dressings. After its preparation it is placed in a double boiler and heated to just above body temperature, at which point it becomes fluid and has a viscosity not unlike that of ordinary paint. In this form it is applied with a paint brush directly to the skin of the leg from the base of the toes upward to just below the knee. It is allowed to come into intimate contact with the ulcer, no preliminary dressing being necessary. A simple spiral bandage without crosses or reverses is applied over the paste, and then more paste is applied over the bandage. This is repeated until there is a total of three layers of bandages and four layers of paste. The final preparation, when cool, becomes rubbery hard and makes a pressure bandage which, because of its slight porosity, will allow escape of the discharge from the ulcer. A maximum of one hour a week is required for the application of the bandage. The length of time that a single bandage may be left in place depends on the amount of edema and the amount of exudate from the granulating surface. A light gauze bandage may be placed around the more permanent paste bandage and the patient instructed to change the former when necessary. In this manner the exudate which escapes through the pores of the paste will be satisfactorily cared for and the dressing will always present a clean and dry external surface. A paste bandage which has been cared for in this manner has been left in place for as long as twelve weeks, and when at the end of such a period the bandage has been finally removed, the ulcer has been found in excellent condition, sometimes completely healed. The bandage is suitable for use in any climate. When the temperature is very high it may be dehydrated and fixed with a solution of 85 per cent alcohol, a diluted "solution of formaldehyde U. S. P." (6 per cent), and 9 per cent ether. This solution is applied by simply sponging the bandage. This form of treatment has also been used in cases of varicose veins with considerable relief on the part of the patient and marked lessening of the edema of the ankles and lower leg. Sooy has also used it in two cases of unhealed secondary burns with very satisfactory results.